

Title (en)  
Micro-extrusion printhead with nozzle valves

Title (de)  
Mikroextrusionsdruckkopf mit Düsenventilen

Title (fr)  
Tête d'impression à micro-extrusion avec obturateurs de buse

Publication  
**EP 2196316 B1 20130717 (EN)**

Application  
**EP 09177089 A 20091125**

Priority  
US 33135508 A 20081209

Abstract (en)  
[origin: EP2196316A1] A solar cell extrusion printing system includes a printhead assembly (100) having one or more elongated valve structures (190-1,190-2) that are adjustably disposed adjacent to the outlet orifices (169-1 to 169-5) of selected nozzle channels (162-1 to 162-5), and a valve control device (192) for controlling the position of the valve structures to facilitate controllable ink flow through selected nozzle channels of the printhead assembly during the gridline printing process. The printhead assembly defines an elongated opening (195-A)(e.g., a slot or hole) that that intersects (i.e., passes through) each of the selected nozzle channels, and an elongated member (190-1A,190-2A) is movably disposed in the slot and is selectively movable between a first (opened) position, in which the valve structure extrusion material is passed by the valve structure through the nozzle channel and out of the printhead, and a closed position, in which the extrusion material is blocked by the valve structure and prevented from passing through the nozzle channel.

IPC 8 full level  
**B41J 2/005** (2006.01); **H01L 31/0224** (2006.01); **H01L 31/18** (2006.01)

CPC (source: EP KR US)  
**B05D 1/265** (2013.01 - KR US); **B41J 2/005** (2013.01 - EP KR US); **B41J 2/1645** (2013.01 - KR); **H01L 21/6715** (2013.01 - KR); **H01L 31/022425** (2013.01 - EP KR US); **H01L 31/18** (2013.01 - KR US); **H01L 31/1888** (2013.01 - KR); **H01M 14/005** (2013.01 - KR); **Y02E 10/50** (2013.01 - EP KR US)

Cited by  
DE102013223250A1; IT202200009485A1; EP2626915A3; EP3736050A1; US10371468B2; US10160071B2; WO2023218491A1

Designated contracting state (EPC)  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

DOCDB simple family (publication)  
**EP 2196316 A1 20100616; EP 2196316 B1 20130717**; CN 101863162 A 20101020; ES 2431349 T3 20131126; JP 2010141326 A 20100624; KR 20100066389 A 20100617; US 2010143581 A1 20100610; US 2015132474 A1 20150514; US 8960120 B2 20150224

DOCDB simple family (application)  
**EP 09177089 A 20091125**; CN 200910258636 A 20091208; ES 09177089 T 20091125; JP 2009277339 A 20091207; KR 20090120930 A 20091208; US 201514597073 A 20150114; US 33135508 A 20081209